

ABSTRACT

When reading a memory cell on a NAND string, the word lines for the memory cells not being read will receive a voltage so that those memory cells operate as pass gates. Over time, if there are a lot of read operations without any program operations, the cells not being read may suffer from Read Disturb because the voltage applied to the word lines may cause electrons to accumulate in the floating gates of the non-selected cells. The accumulation of charge in the floating gates raises the threshold voltage. To avoid the limitations of Read Disturb, only one word line of a block (or other grouping) is used to program and read data. In a system using NAND flash memory, the word line being read is not typically subjected to read disturb. Thus, a NAND flash memory that restricts programming and reading to one word line of a block is not likely to exhibit read disturb in that block.